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PATENT DEPARTMENT
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EXAMINER

PATEL, KANJIBHAI B

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 02/27/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/555,425

Applicant(s)

HIRN, ANDREAS

Examiner

Kanji Patel

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-8 and 10-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 10-13, 15-25 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

1. In response to applicant's amendment filed on December 08, 2003 (Paper No. 8/B), all the requested changes in the claims have been entered.

With this amendment claims 4-5 and 9 are canceled and claims 24-25 are added new. Claims 1-3, 6-8 and 10-25 are pending in the application.

In response to cancellation of claims 4-5, the claim objection has been withdrawn.

A signed copy of the information disclosure statement filed on May 30, 2000 has been enclosed with this Office action.

Applicant's arguments with respect to independent claims 1 and 3 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. In order to avoid abandonment, the drawing informalities noted in Paper No. 7, mailed on 9/5/03, must now be corrected. Correction can only be effected in the manner set forth in the above noted paper.

Claim Objections

3. Claims 6 and 23 are objected to because of the following informalities:

Claims 6 and 23 depend upon the canceled claims 4 and 5.

Appropriate correction is required.

Claim 24, line 2, change "the raster" to -- a raster --.

Claim 25, lines 1 and 2, change "the raster" to -- a raster --.

4. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6-8, 10-13, 15-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Tepmongkol (US 5,757,982).

For claim 1, Tepmongkol discloses a method for converting digital source data referring to source pixels in the raster of a first resolution into digital target data in the raster of a second resolution (figures 1 and 4), comprising the steps of:

(a) scaling the digital source data by at least one scaling factor (column 3 line 65 to column 4 line 1);

(b) allocating a target image matrix (figures 2A-2B) to each of the digital source datum source on a basis of a surround window surrounding the source pixel and determining the digital target data from neighboring target image matrices such that each target pixel is directly formed from a source pixel taking the surroundings thereof into consideration (column 4 lines 1-45);

(c) using each digital source datum for smoothing the target data (at least step 117 in figure 1 provides smoothing) to be determined from all neighboring source data;

(d) implementing scaling and smoothing such in a common processing step (column 5, lines 1-7) that (d1) the target data are smoothed in the raster of the source data (step 117 or smoothing is done before step the last step).

For claim 2, Tepmongkol discloses a method, further comprising the step of: superimposing neighboring target image matrices on one another for determining the target data or are joined without overlap (figure 2B).

For claim 3, Tepmongkol disclose a method for converting digital source data in a raster of a first resolution into digital target data in a raster of a second resolution (figures 1-4), comprising the steps of:

(a) scaling and smoothing (step 117 in figure 1) the digital source data by a scaling factor (column 3 line 65 to column 4 line 6);

(b1) selecting a scaling rule from a plurality of selectable scaling rules (figure 3; column 4, lines 1-30; equation 2 provides selection of four conditions corresponding to four scaling rules);

(b2) selecting a smoothing rule from a plurality of smoothing rules (equation 2 provides four smoothing rules corresponding to four conditions as explained in column 4, lines 1-30);

(c) forming a single scaling and smoothing rule from the selected scaling rule and the selected smoothing rule, both a smoothing of the digital target data in the raster of the digital source data as well as a scaling ensuing in respectively one processing step with said single scaling and smoothing rule during formation of the target data (column 4 line 1 to column 5 line 16);

(c) allocating a target image matrix (figures 2A-2B) to each source datum on a basis of a surround window surrounding the digital source pixel and determining the digital target data from neighboring target image matrices such that each target pixel is directly formed from a source pixel taking the surroundings thereof into consideration;

(d) using each source datum (figures 2A-2B and 3) for smoothing the target data to be determined from all neighboring source data.

For claim 6, Tepmongkol discloses a method, wherein the selecting of the scaling rule ensues on a basis of a print (column 1, lines 25-34).

For claim 7, Tepmongkol disclose a method, further comprising the step of:
using different smoothing rules region-by-region within the print job (column 4, lines 1-45; figure 1; column 1, lines 25-34).

For claim 10, Tepmongkol discloses a method, wherein the scaling and smoothing steps include generating a respective index allocated to the target image matrix from the source data individually pixel-by-pixel, the target data being determined with said index (column 4, lines 6-8; figure 2B; 00,01,10 and 11 in figure 2B provide a respective index to the target matrix from the source data).

For claim 11, Tepmongkol discloses a method, further comprising the step of using the index for addressing a look-up table that contains the target data (column 5, lines 12-17).

For claim 12, Tepmongkol discloses a method, further comprising the step of using the index as an index signal for driving an electronic circuit that forms the target data from the index signals (figure 3).

For claim 13, Tepmongkol discloses a method, further comprising the step of storing the source data byte-by-byte in a shift register with each processing clock, as a result whereof the index is formed from bits of the shift register lying next to one another after the shifting of all data of the group (column 4, lines 36-45).

For claim 15, Kang discloses a method, wherein pixel data belonging to images are processed as the digital source data (figure 1; column 3, lines 39-44).

For claim 16, Tepmongkol discloses a method, further comprising the steps of processing excerpts of the image having $1 \times m$ source pixels in common as a window; forming target image matrices each respectively having $n \times p$ target pixels from each source pixel window; and depositing the target pixels of neighboring target pixel matrices in a memory next to one another or overlapped (figures 2A-2B; 3).

For claim 17, Tepmongkol discloses a method, wherein neighboring target image matrices are overlapped with an OR-operation (equation 1).

For claim 18, Tepmongkol discloses a method, wherein the source pixel windows each respectively comprise 3×3 pixels (figure 2A) for scaling factors (column 3, lines 65-67) $S_{fx}=S_{fy}=2.5$; forming exactly one target image matrix having 3×3 target pixels (figures 2B; 3) from each source pixel window; and forming exactly 5×5 target pixels from respectively four target image matrices by an OR-operation (equation 1; column 2, lines 58-65).

For claim 19, Tepmongkol discloses a method, further comprising the step of: allocating a gray scale value to each source pixel (column 4, lines 28-30; black and white pixel values provide gray scale pixel values).

For claim 20, Tepmongkol discloses a method, wherein at least one of a scaling and smoothing ensues in the gray scale value raster (step 117; column 5, lines 1-8).

For claim 21, Tepmongkol discloses a method, further comprising the steps of: allocating a color value to each source pixel (column 5, lines 28-30; the concepts of the Tepmongkol technique is equally applicable to the color).

For claim 22, Tepmongkol discloses a method, wherein at least one of a scaling and smoothing ensues in the color value raster (column 4, lines 28-30; the concepts of the Tepmongkol technique is equally applicable to the color).

For claim 23, Tepmongkol discloses a method wherein the selecting of the smoothing rule ensues on a basis of a print job (column 4, lines 1-45; figure 1; column 1, lines 25-34).

For claim 24, see the rejection of claim 1 above.

For claim 25, see the rejection of claim 3 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the

examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 8 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Tepmongkol (US 5,757,982) as applied to claims 1-3, 6-8, 10-13 and 15-25 above and further in view of Calarco et al. (US 5,237,432—already on record).

For claim 8, Tepmongkol differs in that he does not clearly disclose a fractional value of the scale factor. However, Calarco et al. in the same field of endeavor discloses an image scaling technique having a fractional value of the scale factor as shown at least in figure 4A. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Tepmongkol wherein the scale factor has a fractional value. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Tepmongkol by the teaching of Calarco et al. in order to provide for accurately scaling the video signals of a digital image or document during the scanning or processing of the digital signals as shown by Calarco et al in. column 3, lines 45-49.

Allowable Subject Matter

5. **Claim 14** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

For claim 14, the prior art on record fails to teach or suggest, alone or in combination, wherein the shift register is filled according to the following rules with every processing block: (a) R_0 through R_{A-1} remain unaffected and (2) $R(i + A) = q(i/Q_y, Q_y - 1 - (i \% Q_y))$ and $R(i+A) = q(i/Q_y, i \% Q_y)$.

Contact information

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **Kanji Patel** whose telephone number is (703) 305 4011. The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 6:30 p.m. Friday off. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, **Mehta , Bhavesh**, can be reached on (703) 308-5246.

Any inquiry of general nature or relating to the status of this application should be directed to the **Group receptionist** whose telephone number is (703) 305-3800.

The **Fax number** for this group is (703) 872-9306.



Kanji Patel
Patent Examiner
Group Art Unit 2625
February 20, 2004